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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/699,262      | 10/31/2003  | Daniel C. Conrad     | US19984054-5        | 2036             |

7590 12/26/2006  
WHIRLPOOL PATENTS COMPANY - MD 0750  
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St. Joseph, MI 49085

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| EXAMINER |
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WEBB, GREGORY E

|          |              |
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| ART UNIT | PAPER NUMBER |
|----------|--------------|

1751

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE  | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS                               | 12/26/2006 | PAPER         |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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|------------------------------|--------------------------------------|--------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/699,262 | <b>Applicant(s)</b><br>CONRAD ET AL. |  |
|                              | <b>Examiner</b><br>Gregory E. Webb   | <b>Art Unit</b><br>1751              |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

  
12/6/06

## **DETAILED ACTION**

### ***Response to Amendment***

1. The following is in response to the applicant's filing of a pre-appeal brief conference.
2. The conferees agreed that previous rejections could be improved upon.
3. As such the following action is directed to those claims and amendments filed 2/3/06.

### **Background**

4. The applicant's claims are directed to a method of cleaning using very specific solvents. The applicant defines the solvent using the functional language non-reactive, non-aqueous, non-oleophilic, apolar working fluid.
5. It should be noted that the applicant provides only a single example of a compound meeting this limitation. The examiner is quite certain that literally thousands of chemicals would meet this functional limitation. However, the applicant has not provided any direction for determining which compounds meet this limitation. Instead the applicant merely states that the prior art compounds fail to meet these limitations and in particular the applicant own term, i.e. not commonly used in the chemical arts, "non-reactive."
6. The examiner does not wish to allow this case until it is clear what compounds fall within this functional category. It would be extremely helpful if the applicant would supply a list of working fluids meeting this limitation. Such an effort by the applicant would be appreciated by the examiner and would most certainly speed prosecution.

### **Claim Interpretation**

The examiner will consider the following compounds as meeting the applicant's claimed functional limitations:

((HFE adj 7100) or HFE-7100 or HFE7100 or (HFE adj 7200) or HFE-7200 or HFE7200 or (methyl adj nonafluoroisobutyl adj ether) or (methyl adj nonafluorobutyl adj ether) or (methyl adj nonafluoro adj isobutyl adj ether) or (methyl adj nonafluoro adj butyl adj ether) or (methoxy adj nonafluorobutane) or nonafluoro-4methoxybutane or methoxynonafluorobutane or (cf adj 61) or (hfc adj 7100) or (hfe adj 449) or methoxyperfluorobutane or (methyl adj perfluorobutyl adj ether) or (nonafluorobutyl adj methyl adj ether) or (perfluorobutyl adj methyl adj ether) or 163702-07-6 or (methyl adj nonafluoroisobutyl adj ether) or (methyl adj perfluoroisobutyl adj ether) or 163702-08-7 or difluoromethoxymethyl or (trifluoromethyl)propane or (C.sub.4 adj F.sub.9 adj OCH.sub.3))

Concerning the applicant's limitation "in an automatic consumer-operated laundering apparatus", the examiner will consider any automatic laundering apparatus to be equivalent to a consumer-operated laundering apparatus. It is not clear to the examiner how a consumer laundering device would be different from a commercial device except perhaps by size. As such the examiner maintains that such limitations as "consumer-operated" would be inherent to any laundering device and will be interpreted in its broadest sense.

The earliest use of the solvents mentioned above dates back to Flynn et al (US 5,718,293; filed January 20th, 1995 to the 3M corporation) which can be compared to the applicant's priority date of 4/29/1997. Thus it is clear that 3M was in possession of these solvents prior to the applicant's filing. It should be noted that in this first reference, Flynn taught the use of the

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solvents for extinguishing fires. However, as can be seen below, dry cleaning using these solvents was also known as early as 1995.

***Claim Rejections - 35 USC § 102/103***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

***Claim Rejections - 35 USC § 103***

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8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 1-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Flynn et al (US 5,827,812; priority to 5/16/1995) or alternatively rejected under 35 U.S.C. 103 as being obvious

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in view of Flynn et al and further in view of Henderson (US 2,940,287) and further in view of Williams (US 3,234,660).

Concerning the preferred working fluid, Flynn teaches the following:

where, in the above formula, R.sub.f is selected from the group consisting of linear or branched perfluoroalkyl groups having 4 carbon atoms. The ether may be a mixture of ethers having linear or branched perfluoroalkyl R.sub.f groups. For example, **perfluorobutyl methyl ether** containing about 95 weight percent perfluoro-n-butyl methyl ether and 5 weight percent **perfluoroisobutyl methyl ether** and **perfluorobutyl methyl ether** containing about 60 to 80 weight percent perfluoroisobutyl methyl ether and 40 to 20 weight percent perfluoro-n-butyl methyl ether are useful in this invention. (*emphasis added*)

Concerning the washing, Flynn teaches the following:

The **cleaning** process of the invention can be carried out by contacting a contaminated substrate with one of the azeotrope-like compositions of this invention until the contaminants on the substrate are dissolved, dispersed or displaced in or by the azeotrope-like composition and then removing (for example by rinsing the substrate with fresh, uncontaminated azeotrope-like composition or by removing a substrate immersed in an azeotrope-like composition from the bath and permitting the contaminated azeotrope-like composition to flow off of the substrate) the azeotrope-like composition containing the dissolved, dispersed or displaced contaminant from the substrate. The azeotrope-like composition can be used in either the vapor or the liquid state (or both), and any of the known techniques for "contacting" a substrate can be utilized. For example, the liquid azeotrope-like composition can be sprayed or brushed onto the substrate, the vaporous azeotrope-like composition can be blown across the substrate, or the substrate can be immersed in either a vaporous or a liquid azeotrope-like composition. Elevated temperatures, ultrasonic energy, and/or agitation can be used to facilitate the **cleaning**. Various different solvent **cleaning** techniques are described by B. N. Ellis in *Cleaning and Contamination of Electronics Components and Assemblies*, Electrochemical Publications Limited, Ayr, Scotland, pages 182-94 (1986). (*emphasis added*)

Concerning the textile, Flynn teaches the following:

Both organic and inorganic substrates can be cleaned by the process of the invention. Representative examples of the substrates include metals; ceramics; glass; polymers such as: polycarbonate, polystyrene and acrylonitrile-butadiene-styrene copolymer; natural **fibers** (and **fabrics** derived therefrom) such as: cotton, silk, linen, wool, ramie; fur; leather and suede; synthetic **fibers** (and **fabrics** derived therefrom) such as: polyester, rayon, acrylics, nylon, polyolefin, acetates, triacetates and blends thereof; **fabrics** comprising a blend of natural and synthetic

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**fibers**; and composites of the foregoing materials. The process is especially useful in the precision cleaning of electronic components (e.g., circuit boards), optical or magnetic media, and medical devices and medical articles such as syringes, surgical equipment, implantable devices and prostheses. (*emphasis added*)

Concerning the "washing adjuvant" Flynn teaches numerous compounds which would meet the applicant's broad limitation of "washing adjuvant." Because the Flynn reference teaches azeotropes, the Flynn compositions would require at least two solvents. The first solvent can be considered the "working fluid" and the second solvent would be considered the "adjuvant." Furthermore as the applicant states in claim 17 the adjuvant can be any solvent, this limitation is clearly met.

Flynn further teaches the use of these azeotropic composition in a dry cleaning process (see example 153). Dry cleaning requires a closed environment and would thus inherently read on the applicant's fluid and textiles contained in a chamber. Such features are inherent to dry cleaning.

Detecting fluid levels, sensing moisture, measuring conductivity, humidity are all well-known in the dry cleaning industry and would be inherent to the dry cleaning process. This technique has been used since at least 2/1/1954 (see Henderson; US 2,940,287). Alternatively, should the applicant not consider this feature as well known, Flynn in view of Henderson would render such features as obvious.



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Concerning the various properties as KB value, surface tension, etc. as Flynn teaches the identical material limitations as the instant claims such material properties as KB values and surface tension would be inherent to those prior art composition.

Concerning the filtering process, it is well known in the dry cleaning art to use filters so that expensive dry cleaning chemicals can be reused and would thus be inherent to the dry cleaning process. Alternatively, combining Flynn in view of Williams (US 3,234,660; filed 8/8/1962) would render such limitations as clearly obvious with the motivation being that the dry cleaning solvent can be reused.

### ***Conclusion***

At this point no allowable subject matter is indicated. The applicant's working fluid was well-known prior to the filing of this application and the remainder of the limitations presented by the applicant are at least 30 year-old-technology and would also not be considered novel.

The applicant's were clearly beaten to the gate by the 3M Corporation as 3M was describing dry cleaning processes using the claimed solvents as far back as 1995.

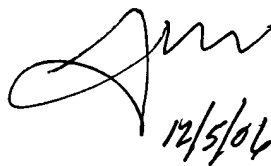
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory E. Webb whose telephone number is 571-272-1325.

The examiner can normally be reached on 9:00-17:30 (m-f).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglass McGinty can be reached on (571)272-1029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to be 'G. Webb', with a date '12/5/04' written below it.

Gregory E. Webb  
Primary Examiner  
Art Unit 1751

gew